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PATENT APPLICATION

RESPONSE UNDER 37 CFR §1.116
EXPEDITED PROCEDURE
TECHNOLOGY CENTER ART UNIT 3748

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Shinya HIROTA et al.

Application No.: 10/088,476

Filed: March 20, 2002

Group Art Unit: 3748

Examiner: T. Nguyen

Docket No.: 112340

For: EXHAUST GAS PURIFICATION DEVICE

REQUEST FOR RECONSIDERATION UNDER 37 C.F.R. § §1.116

Director of the U.S. Patent and Trademark Office
Washington, D.C. 20231

Sir:

In reply to the December 16, 2003 Office Action, the period for reply extended to April 16, 2004 by a Petition for Extension of Time filed herewith, and the March 30, 2004 personal interview, please consider the following remarks.

Claims 2-21 are pending.

Applicants acknowledge with appreciation the allowance of claims 8-15, and the indication of allowable subject matter in claim 20. Claim 20 has not been re-written in independent form, however, because of Applicants' belief that claim 2, from which claim 20 depends, is allowable over the applied art of record.

Applicants thank Examiner Nguyen for the courtesies extended to Applicants' representative during the March 30, 2004 personal interview. The points discussed are incorporated into the remarks below and constitute the Applicants' record of the interview.

An Information Disclosure Statement was filed on March 22, 2004 with references. The Examiner is requested to consider the disclosed information.

I. Reply to Rejections

The Office Action rejects claims 2, 3, 6 and 7 under 35 USC §102(b) as anticipated by U.S. Patent 5,489,319 to Tokuda et al. (hereinafter, Tokuda). This rejection is respectfully traversed.

In order for an invention to be anticipated, the same device, including all claim limitations, must be shown to exist in a single prior art reference in which every element of the claimed invention is literally present, arranged as in the claim. Richardson v. Suzuki Motor Co., Ltd., 868 F.2d 1226 [9 USPQ2d 1913] (Fed. Cir. 1989), cert. denied, 493 U.S. 853 (1989).

Claim 2 recites, among other features, "means for judging if the particulate filter will be deteriorated by heat derived from the oxidation of the particulates." Tokuda does not disclose this feature, expressly or inherently.

Tokuda only mentions purifying of the exhaust gases in col. 1, lines 43-45 in the context of related art, and then only to the extent that the filter 83 (of carbon or soot components) is heated up by an electric heater installed in the filter 83 to burn up carbon components trapped in the filter 85 and to reactivate the filter 83.

Tokuda is primarily interested in preventing his ceramic filter 83, which is taught as being very weak against a rapid change in temperature, from cracking due to a rapid change in temperature - see col. 2, lines 29-54. Tokuda measures the temperature of the filter and the temperature of the gas flowing to the filter and uses that difference to ensure that the ceramic

filter is not heated too rapidly to crack. As stated in col. 5, lines 27-32, Tokuda prevents cracking of the ceramic filter by preventing a great amount of exhaust gas of high temperature from rapidly flowing into the filter and by gradually increasing the temperature of the filter.

Tokuda simply is not concerned with protecting his filter from deterioration due to heat generated by oxidation of particulates on the filter, and does not determine if his particulate filter will be deteriorated by heat from the oxidation of the particulates. In fact, Tokuda itself does not disclose either burning or oxidation of the particulates. Burning is disclosed in Tokuda's related art. Oxidation is not disclosed at all.

In response to arguments, which were presented in the Amendment filed on September 30, 2003, the Office Action states that "[A]s clearly shown in Figure 1, Tokuda et al. have temperature sensors (13,14) located upstream and within the filter, respectively, for judging if the particulate filter will be deteriorated by heat derived from the oxidation of the particulates."

Applicant respectfully disagrees with this conclusion for a number of reasons. In the first place, the Office Action fails to explain how two temperature sensors (13, 14) perform a judging function. While temperature sensors inherently perform a temperature sensing function, Applicant is unaware of any disclosed mechanism by which temperature sensors 13, 14 perform a judgment of any type. Nor has the Office Action explained how sensors 13, 14 perform a judging function, either expressly or inherently.

In the second place, as pointed out above concerning Tokuda's related art, Tokuda only discloses that the filter 83 (of carbon or soot components) is heated up by an electric heater installed in the filter 83 to burn up carbon components trapped in the filter 83 and to reactivate the filter 83 (col. 1, lines 43-45). Tokuda does not address heating of the filter by the burning of the carbon components trapped in the filter, or what effect this might have on the filter, let alone whether the particulate filter will be deteriorated by heat generated by

oxidation of particulate matter in or on the filter. In short, Tokuda fails to even disclose oxidation. Such concepts are found in Applicants' disclosure and are impermissibly discussed with respect to Tokuda as improper hindsight reconstruction of the claimed invention based on Applicants' disclosure.

The conclusion that "Tokuda et al. are indeed very concerned with protecting their filter from deterioration due to heat generated by oxidation of particulates" is pure speculation not supported by any disclosure in Tokuda. It is well settled that a rejection cannot properly be based on speculation. As is well settled that a rejection based on Section 102 must rest on a factual basis with the facts being interpreted without hindsight reconstruction of the invention from the prior art. In making this evaluation, the examiner has the initial duty of supplying the factual basis for the rejection he advances. An Examiner may not, because of doubts of the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis, See, In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968).

Claim 3 depends from claim 2 and is not anticipated by Tokuda for at least the reasons stated above. Claim 6 also recites among other features, "means for judging if the particulate filter will be deteriorated by heat derived from the oxidation of the particulates." Tokuda does not disclose this feature, expressly or inherently, as discussed above.

For the aforementioned reasons, Applicants respectfully submit that the rejection of claims 2, 3, 6 and 7 under 35 USC §102(b) as anticipated by U.S. Patent 5,489,319 to Tokuda is based on speculation, unfounded assumptions and hindsight reconstruction of Applicants' invention based solely on Applicants' disclosure, and should be withdrawn.

The Office Action rejects claims 6 and 7 under 35 USC §102(b) as being clearly anticipated by U.S. Patent 5,582,002 to Pattas. This rejection is respectfully traversed.

In the first place, rejection of the same claims (claims 6 and 7) with different references, where there is no legitimate reason to do so, is strictly prohibited by the Manual of Patent Examining Procedure - see MPEP §706.02, in the section labeled "Choice of Prior Art: Best Available." This reason was clearly stated in the Amendment filed on September 30, 2003, and has not been rebutted.

Applicants were subjected to an improper restriction requirement in the first Office Action and now are being subjected to improper plural rejections on different art. Applicants respectfully request that the Office follow its own policies and procedures and, with respect to the rejections of record, withdraw these unduly multiplicious and unauthorized prior art rejections.

This rejection is improper with respect to claims 6 and 7, which recite that the judging means judges that the particulate filter will be deteriorated by heat when the temperature of the particulate filter is higher than a predetermined temperature. Pattas does not disclose measuring the temperature of its filters 2, 4, 6. Rather, Pattas measures the temperature of the exhaust gas downstream of the diesel soot filters to determine if the temperature of the exhaust gas exceeds the maximum admissible exhaust gas temperature - see col. 3, lines 28-32. Pattas does not disclose, explicitly or inherently, determining the temperature of the particulate filter or that it is above a certain threshold. Accordingly, Pattas does not anticipate claims 6 and 7.

In response to these arguments, which were presented in the Amendment filed on September 30, 2003, the Office Action asserts that the exhaust gas temperatures measured by Pattas "are relatively high and are good approximation of the temperatures of the particulate filters."

In the first place, this is speculation. In the second place, the claims positively recite that the judging means judges that the particulate filter will be deteriorated by heat when the

temperature of the particulate filter is higher than a predetermined temperature. This positively recited feature of the claims is simply not disclosed in Pattas and no amount of speculation concerning what exhaust gas temperatures, that are measured by Pattas, mean provides factual evidence that Pattas achieves the claimed invention.

Furthermore, with respect to claim 7, Pattas deliberately heats the soot filters to start burning of particulates - see col. 3, lines 9-11, for example. The Office Action fails to explain how Pattas can deliberately heat the soot filters to cause particulate combustion and also judge that the particulate filter will be deteriorated when the particulate combustion temperature is reached.

In view of the foregoing, the rejection of claims 6 and 7 under 35 USC §102(b) as anticipated by Pattas is improper and should be withdrawn.

The Office Action rejects claims 4 and 5 under 35 USC §103(a) as unpatentable over Tokuda in view of "official notice." This rejection is respectfully traversed.

Claims 4 and 5 depend from claim 2, and Tokuda does not render claim 2 unpatentable for the reasons stated above. Moreover, what is allegedly taught by "official notice" does not address the shortcomings of Tokuda which are set forth above.

Accordingly, the rejection of 4 and 5 under 35 USC §103(a) as unpatentable over Tokuda in view of "official notice" is improper and should be withdrawn at least for the reasons stated above regarding the failure of Tokuda to anticipate the subject matter of claim 2.

The Office Action rejects claims 16-19 and 21 under 35 USC §103(a) as unpatentable over Tokuda in view of U.S. Patent 6,167,696 to Maaseidvaag et al. (hereinafter, "Maaseidvaag"). This rejection is respectfully traversed.

In the first place, Tokuda does not render claim 16 unpatentable at least because claim 16 recites, among other features, "means for judging if the particulate filter will be

deteriorated by heat derived from the oxidation of the particulates." Tokuda does not disclose this feature, expressly or inherently.

Tokuda only mentions burning of the particulates in col. 1, lines 43-45 in the context of related art, and then only to the extent that the filter 83 (of carbon or soot components) is heated up by an electric heater installed in the filter 83 to burn up carbon components trapped in the filter 83 and to reactivate the filter 83.

Tokuda is primarily interested in preventing his ceramic filter 83, which is taught as being very weak against a rapid change in temperature, from cracking due to a rapid change in temperature - see col. 2, lines 29-54. Tokuda measures the temperature of the filter and the temperature of the gas flowing to the filter and uses that difference to ensure that the ceramic filter is not heated too rapidly to crack. As stated in col. 5, lines 27-32, Tokuda prevents cracking of the ceramic filter by preventing a great amount of exhaust gas of high temperature from rapidly flowing into the filter and by gradually increasing the temperature of the filter.

Tokuda simply is not concerned with protecting his filter from deterioration due to heat generated by oxidation of particulates on the filter, and does not determine if his particulate filter will be deteriorated by heat from the oxidation of the particulates.

Maaseidvaag does not supply the feature(s) missing from Tokuda. In fact, Maaseidvaag absolutely fails to disclose any means for judging if the particulate filter will be deteriorated by heat derived from the oxidation of the particulates. Therefore, the combination fails to suggest all the features of claims 16, 17 and 21 and dependent claims 18 and 19.

So, to the extent that the rejection asserts that it would be obvious to modify Tokuda to use Maaseidvaag's filter in Tokuda to purify both soot and NOx emissions, it is in error, improper and should be withdrawn.

Additionally, because Tokuda does not disclose using a catalytic converter, the Office Action fails to make out a prima facie case that it would be obvious to place a filter with a three-way catalyst in Tokuda. It appears that this rejection is based on improper hindsight reconstruction of Applicants' invention based solely on Applicants' disclosure.

Accordingly, claims 16-19 and 21 are patentable over Tokuda and Maaseidvaag.

Applicants note that these arguments were set forth in the previously filed Amendment, filed on September 30, 2003, and are not rebutted or otherwise discussed in this Office Action.

For the aforementioned reasons, Applicants respectfully submit that claims 2-7 and 16-21, in addition to allowable claims 8-15, are patentable and should be allowed.

Should the Examiner believe that anything further is needed to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

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JAO:SSK/jfb

Attachment:
Petition for Extension of Time

Date: April 7, 2004

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